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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|------------------------|---------------------|------------------|
| 10/646,253 | 08/22/2003 | Nicolas Pondicq-Cassou | 60246-214 | 9419 |
| 26096 | 7590 | 07/09/2004 | EXAMINER | |
| CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009 | | | JIANG, CHEN WEN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3744 | |

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|-----------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/646,253 | PONDICQ-CASSOU ET AL. | |
| | Examiner | Art Unit | |
| | Chen-Wen Jiang | 3744 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 May 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 and 13 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8,12 and 14-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 May 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 20030822.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species V (Fig.7, claims 1-8,12 and 14-20) in the reply filed on 2004/05/18 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5,7,15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 5,7,15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of functions, such omission amounting to a gap between the necessary functional connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: Applicant elects Species V of Fig.7, it is not clear what the meaning of "open" and "close" on three-way valve.

5. **The following rejections are based on the best understanding of the claimed limitations.**

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 4,14-17 and 18-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The hot refrigerant from the compressor flows through the valve, **through the expansion device**, and through heat accepting heat exchanger to melt the frost on the heat accepting heat exchanger does not invent any useful system or any useful improvement since the refrigerant will absorb heat after through the expansion device and the efficiency will be worse than bypass the expansion valve.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Vogel (U.S. Patent Number 5,575,158).

Vogel discloses a refrigeration defrost cycles. Referring to Fig.1, the system comprises a compressor 10, a condenser 26, an expansion valve 68, an evaporator 73 and a control valve 66 between the compressor 10 and the expansion valve 68.

9. Claims 1,2 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuwabara et al. (U.S. 2004/0020230).

Kuwabara et al. disclose a heat pump apparatus having a refrigerating cycle. Referring to Fig.1, the system comprises a compressor 1, a gas cooler 3, a pressure reducing device 5, a valve 15 and an evaporator 7. The system is designed so that water can be heated by the gas cooler, refrigerant such as CO₂ working in a supercritical area is filled and used at a high-pressure side in the refrigerating cycle.

10. Claims 1,2,3,5,6 and 7 are rejected under 35 U.S.C. 102(a) as being anticipated by Nakayama et al. (JP 200322391).

Nakayama et al. disclose a heat pump type hot water heater. Referring to Fig.1, the system comprises a compressor 25, a condenser 26, a hot water tank 3, an expansion valve 27, a valve 39, a bypass line 38, a detecting sensor 48 and an evaporator 28. Water pump 13 is stopped during the defrosting operation.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2,3,5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogel (U.S. Patent Number 5,575,158) in view of Kuroki et al. (U.S. Patent Number 6,418,737).

In regard to claim 3, Vogel discloses the invention substantially as claimed. However, Vogel does not disclose a detecting sensor. Kuroki et al. disclose a detecting sensor in the same field of endeavor for the purpose of controlling defrost. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Vogel with a sensor in view of Kuroki et al. so as to control defrost operation.

In regard to claim 2, Kuroki et al. disclose the refrigerant perform heat exchange with water.

In regard to claim 5, Vogel discloses the valve 72 is closed when it's not defrosting.

In regard to claim 6, Kuroki et al. disclose a pump 3 in the heat rejection circuit.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vogel (U.S. Patent Number 5,575,158) in view of Kuroki et al. (U.S. Patent Number 6,418,737) as applied to the claim 3 above.

It is a design choice in the prior art to combine two one-way valves 66 and 72 in the same field of endeavor for the purpose of one three-way valve control. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use one three-way valve in order to control flow direction.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kuroda et al. (U.S. Patent Number 4,770,000) is made of record as defrosting of refrigeration system with valve 8 is the bypass circuit.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (703) 308-0275. The examiner can normally be reached on Tuesday-Friday from 7:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (703) 308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chen-Wen Jiang
Primary Examiner

